NRC PERIODIC BRIEFING ON NEW REACTOR ISSUES

NUCLEAR REGULATORY COMMISSION

February 20, 2008

Oral Statement: Need for and Interest in NGNP

Submitted By:

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Good afternoon, Mr. Chairman and Commissioners. My name is Fred Moore, and I am the Global Director of Manufacturing & Technology for Energy with The Dow Chemical Company. In that capacity I am responsible for assuring that Dow's businesses are provided with safe, reliable and cost effective power, steam, and other utilities. We operate more than $6 billion in Energy assets globally.

Let me begin by setting the degree of our interest in solutions to the nation's security of supply for both energy and feedstocks.

No industry is more acutely aware of the needs to reduce our dependency on oil and natural gas than ours. In fact, Dow is one of the largest industrial consumers of power and steam in the world. Globally, we require almost 4000 MWs of electricity and consume in excess of 22 million pounds an hour of steam. At $8 per MMBTU equivalent fuel cost, our fuel bill alone would be in the $5 billion per year range.

More importantly for Dow, is the fact that the majority of our feedstock demands are met by fossil fuels, principally natural gas liquids. These feedstocks along with the energy to power our processes and drive the chemical reactions consume the equivalent of more than 800,000 barrels of oil per day. Globally, our 2007 combined fuel and feedstock bill is likely to be in excess of $24 billion dollars. By comparison, we spent just $8 billion dollars in 2002. In other words, we had a $16 billion dollar jump in energy and hydrocarbon costs in just 5 years.

Is it any wonder that the U.S. Chemical industry went from a trade surplus of more than $20 billion to a deficit of more than $9 billion in the past decade? U.S. manufacturing is the leading edge of demand destruction in the face of high energy prices. U.S. Energy Administration data show that since the run up in high energy prices in the late 1990's, more than 3 million high paying manufacturing jobs have been lost.

And let's not forget that more than 95% of everything we touch in our daily lives relies on chemistry and our industry – from drinking water, to toothpaste, to the food we eat, to computers and phones, to the cars we drive and the medicines we take. All of these are made possible by the science of chemistry and the products derived from our chemical industry.

We must have a national call to arms on the joint and inseparable issues of energy security and climate change. We see at least 4 specific goals:

- First, we must reduce our energy demand. The cheapest energy is that which we do not use.
    - And at Dow, we are relentless in driving energy efficiency. Between 1995 and 2005, we reduced our energy intensity by 22%, saving more than 900 trillion BTUs. Enough to power all the homes and businesses in the state of California for an entire year. And we saved nearly $4.5 billion in fuel costs. And we have committed publicly to reduce our energy intensity by another 25% between 2005 and 2015.

    - Such an improvement, if replicated across the country, would be dramatic. If the U.S. reduced its energy intensity by 25% between

2005 and 2015, and assuming GDP grows at the expected 3% rate, we would eliminate the oil equivalent of all the Persian Gulf imports today.

    - But that is not enough.

- Second, we must pour more money into national research programs to make coal a sustainable energy source while increasing our work on renewable and alternatives such as biomass and nuclear.
- Third, we must diversify our energy supplies here in the U.S.
- And fourth, we must accomplish all the above within the framework of reducing our impact on global climate change.

Given these dual and inseparable problems, the necessity of a coherent energy policy is paramount. We need security of supply, a sustainable supply and a competitively priced slate of energy.

Our CEO, Andrew Liveris, recently noted is a speech to the Global Automotive Conference in 2007 that there are currently plans to build more than 80 large scale chemical plants across the globe in the coming decade … with price tags of a billion dollars or more and creating thousands of good paying jobs. Not a single one is planned for the U.S.

He went on to say that, and I quote "I am not worried about my industry's and my company's future per se. We will continue to produce essential products and continue to do well. What concerns me is this question. Will the chemical industry and other manufacturers continue to be a part of the American economy?"

The U.S. must understand that until alternative technologies become a larger part of the energy mix, traditional fossil fuels (oil, natural gas, and coal) will remain critical to meeting demand and feedstock needs. Efficient use of these limited resources with an emphasis on carbon management must be a strong component of any climate change strategy. Dow also believes that nuclear power is an essential technology that must be expanded as more R&D is done on safe handling and fuel reprocessing.

Dow has committed that at least 50% of the energy it consumes globally will be non-carbon emitting by 2050. The energy mix will include renewables such as wind and solar, alternatives such as nuclear, and carbon sequestration technologies.

Nuclear can provide a route, via a multi-generational approach for technology, which will allow decades of coal use in the U.S. without CO2 production. Nuclear generation of steam, power and hydrogen will provide an avenue to produce synthetic diesel, gasoline, and other feedstocks via gasification of coal.

Coal is estimated to have known global reserves of 165 years, while natural gas is 70 years and oil is just 45 years.

More importantly, generation of synthetic diesel, gasoline and other feedstocks will allow the U.S. to utilize the existing infrastructure that we have built to support core needs such as transportation and home and business heating. This infrastructure has taken close to a century to develop and construct and any alternative approaches for fundamentally new fuel source consideration, such as hydrogen, have enormous safety, infrastructure and efficiency hurdles.

As we understand the Next Generation Nuclear Plant program technology, it is likely to be significantly safer than current technologies and provide process heat at temperatures that, unlike current light water reactors, can be suitable for chemical processing.

Dow believes it can help frame this technology development by helping to show the potential benefits of this technology if it is effectively integrated with large petrochemical plants.

For the U.S. to turn its back on nuclear energy and coal is not only illogical, but it defies the power of economic reason.

Thank you and I look forward to any questions you may have.